

Geomorphic Stream Restoration Demonstration Project



CALFED Bay Delta
Ecosystem Restoration Projects and Program

2001 Proposal



Sloughhouse Resource Conservation District

May 2000

Proposal # 2001-0202 (Office Use Only)**PSP Cover Sheet** (Attach to the front of each proposal)Proposal Title: Geomorphic Stream Restoration Demonstration ProjectApplicant Name: Sloughhouse Resource Conservation DistrictContact Name: Jenny PickelMailing Address: 9701 Dino Drive Suite 170 Elk Grove CA 95624Telephone: 916-714-1104 ext. 3Fax: 916-714-1117Email: jenny.pickel@ca.usda.gov**Amount of funding requested:** \$ 505,000

Some entities charge different costs dependent on the source of the funds. If it is different for state or federal funds list below.

State cost _____

Federal cost _____

Cost share partners?

____ Yes ____ No

Identify partners and amount contributed by each _____

Indicate the Topic for which you are applying (check only one box).

- | | |
|---|--|
| <input type="checkbox"/> Natural Flow Regimes | <input type="checkbox"/> Beyond the Riparian Corridor |
| <input type="checkbox"/> Nonnative Invasive Species | <input type="checkbox"/> Local Watershed Stewardship |
| <input checked="" type="checkbox"/> Channel Dynamics/Sediment Transport | <input type="checkbox"/> Environmental Education |
| <input type="checkbox"/> Flood Management | <input type="checkbox"/> Special Status Species Surveys and Studies |
| <input type="checkbox"/> Shallow Water Tidal/ Marsh Habitat | <input type="checkbox"/> Fishery Monitoring, Assessment and Research |
| <input type="checkbox"/> Contaminants | <input type="checkbox"/> Fish Screens |

What county or counties is the project located in? Sacramento CountyWhat CALFED ecozone is the project located in? See attached list and indicate number. Be as specific as possible 11 -eastside delta tributaries

Indicate the type of applicant (check only one box):

- | | |
|---|---|
| <input type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input checked="" type="checkbox"/> Local government/district | <input type="checkbox"/> Tribes |
| <input type="checkbox"/> University | <input type="checkbox"/> Private party |
| <input type="checkbox"/> Other: _____ | |

Indicate the primary species which the proposal addresses (check all that apply):

- | | |
|---|--|
| <input checked="" type="checkbox"/> San Joaquin and East-side Delta tributaries fall-run chinook salmon | |
| <input type="checkbox"/> Winter-run chinook salmon | <input type="checkbox"/> Spring-run chinook salmon |
| <input type="checkbox"/> Late-fall run chinook salmon | <input type="checkbox"/> Fall-run chinook salmon |
| <input type="checkbox"/> Delta smelt | <input type="checkbox"/> Longfin smelt |
| <input type="checkbox"/> Splittail | <input type="checkbox"/> Steelhead trout |
| <input type="checkbox"/> Green sturgeon | <input type="checkbox"/> Striped bass |
| <input type="checkbox"/> White Sturgeon | <input type="checkbox"/> All chinook species |
| <input type="checkbox"/> Waterfowl and Shorebirds | <input type="checkbox"/> All anadromous salmonids |
| <input type="checkbox"/> Migratory birds | <input type="checkbox"/> American shad |
| <input type="checkbox"/> Other listed T/E species: _____ | |

Indicate the type of project (check only one box):

- | | |
|--|---|
| <input type="checkbox"/> Research/Monitoring | <input type="checkbox"/> Watershed Planning |
| <input checked="" type="checkbox"/> Pilot/Demo Project | <input type="checkbox"/> Education |
| <input type="checkbox"/> Full-scale Implementation | |

Is this a next-phase of an ongoing project? Yes _____ No X
Have you received funding from CALFED before? Yes _____ No X

If yes, list project title and CALFED number _____

Have you received funding from CVPIA before? Yes _____ No X

If yes, list CVPIA program providing funding, project title and CVPIA number (if applicable):

By signing below, the applicant declares the following:

- The truthfulness of all representations in their proposal;
- The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

William Ooster

Printed name of applicant

William Ooster

Signature of applicant

EXECUTIVE SUMMARY

Geomorphic Stream Restoration Demonstration Project

Amount Requested: **\$506,616**

Applicant: Sloughhouse Resource Conservation District
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Elk Grove, CA 95624
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Participants & Collaborators:

USDA Natural Resources Conservation Service
Sacramento County Parks & Recreation
Leland Schneider, Landowner
Cosumnes River Task Force

The Geomorphic Stream Restoration Demonstration Project will take place on a one-mile stretch of the Cosumnes River just below the Highway 16 bridge. This channel dynamics/sediment transport demonstration project will test the hypothesis that, **creating a stable channel without structural measures and returning suitable size clean gravel to the system, will lead to improved salmon spawning habitat and accelerated riparian reforestation which will likely increase the San Joaquin fall run Chinook salmon population.** The project will minimize erosion damage using physical and geologic principles and prove that existing techniques used for hard-engineered bank stabilization can also be used for ecosystem restoration. In accordance to CALFEDs ERP goals and CVPIA priorities, this project will encourage the dominance of native riparian habitat, provide aesthetic and scientific benefits, and provide valuable habitat for San Joaquin fall run Chinook salmon.

PROJECT DESCRIPTION

Problem:

The geomorphic stream restoration demonstration project will illustrate that stream bank erosion problems can be minimized and managed while providing improved terrestrial and aquatic habitat where adequate floodplain habitat exists. The project area is located on the Cosumnes River just below the highway 16 crossing. The stream bank soils are sandy and non-cohesive. The bank soils, in combination with the large flows in 1986 and 1997 that deposited large gravel and cobbles downstream of the bridge, have started a bank erosion process on both sides of the project reach. The bank erosion is threatening a heron and egret rookery on the south bank and a public airport on the north. The resulting sedimentation has inundated the salmon spawning gravel thus adversely affecting the production of fry.

In 1997, Philip Williams & Associates conducted a reconnaissance survey for the Nature Conservancy that identified sixty bank erosion sites between Michigan Bar Road and Wilton Road on the Cosumnes River. Eleven of these sites were armored with concrete rubble, shotcrete or riprap. (Philip Williams & Assoc., 1997). These traditional hard engineered bank stabilization approaches lead to a

reduction in habitat and water quality. The objective of this project is to restore channel processes to the project area using physical and geologic principles. The project will lead to an enhancement in native riparian habitat and the rehabilitation of important salmon spawning habitat. This holistic approach will optimize ecosystem benefits in the project area.

Conceptual Model

1. Define flow frequency criteria

The project area is between the Michigan Bar gage and the area studied by USGS to define the 1% chance floodplain between Highway 99 and Dillard Road. The hydrology in this reach can be considered equivalent to the gage because no major tributaries enter the system between the gage and the project site. The flows considered in the project design are listed in Table 1. The project will not increase the area exposed to frequent overbank flow, and will reduce channel velocities for the over bank events.

Table 1. Flow Frequency Information

Frequency	67%	50%	20%	10%	4%	2%	1%
Flow cfs	6600	11000	22250	34500	52000	68500	82000

Data Source: USGS Cosumnes River, 1998, Joel R. Guay et al

2. Find stable points in the system using a geology map

Down stream of the project reach is a reach that has not been eroded significantly in the last 80 years based on photographic evidence and inspection of the reach banks. The proposed project has two stable points that can be used to develop a reconstruction plan using engineering and geomorphic principles. At completion, the channel should be stable up to the 4% chance event 52,000 cfs.

3. Define what stream type is present

The project site is located at the transition point from the bedrock canyon to the alluvial floodplain on the Cosumnes River. The channel can be described as an incised C-3 (Rosgen, 1996). The incision of about 25 to 30 feet is a result of gold mining, flood plain land use changes, and downstream levee construction.

4. Estimate floodplain gradient and width using field measurements

The site slopes generally from east to west, with an elevation range from approximately 130 to 160 feet above mean sea level (msl). The historical micro-topography adjacent to the project has been altered by land leveling and dredging the river. The channel has been straightened, deeply incised, and confined by levees to maximize the area available for farming and reduce flooding of adjacent farm fields downstream of the project area. Since incision has occurred the channel has widened to an average width of 300 to 400 feet in the project reach (Photo)

5. Estimate appropriate base channel flow and sinuosity

The base flow channel was estimated using HEC-RAS
Sinuosity = 1.1 to 1.3 (Rosgen)

6. Develop appropriate floodplain geometry and enter into appropriate water surface profile model
The attached plans were developed after HEC-RAS analysis. (see attachment A)

7. Check velocities through sections in channel and floodplain. Check for a range of end values
The HEC-RAS analysis indicates that the re-creation of a channel and floodplain bench will reduce peak and average floodplain bank velocities.

8. Based on velocities from the model check channel geometry for stability using appropriate model
The conceptual model developed in HEC-RAS and the streambed gravel gradation tested in CHAN-STAB for the bank full flow velocity shown in HEC-RAS indicate that this channel alignment will be stable for a range of events.

9. If models show a reduction in velocities and channel stabilization, develop vegetation model that will favor aquatic and terrestrial wildlife.

Native species of sedges and rushes will be planted on both channel banks. A row of willows will be planted next to the row of sedges and rushes. It has been shown that roots reduce sediment delivery to streams by minimizing streambank erosion (Binford & Buchenau, 1993). The floodplain vegetation will provide shade, organic matter, and woody debris to the channel. This vegetation will also provide habitat for terrestrial wildlife.

10. Develop gravel enhancement model

Gravel excavated from the channel that is currently unavailable for spawning habitat will be cleaned, sorted and put back into the channel. This gravel and the rehabilitated riparian habitat will have the potential to provide valuable Chinook salmon spawning habitat. A 1957 study by the Department of Fish and Game estimated that under favorable flow and gravel conditions the Cosumnes River could support more than 17,000 Chinook salmon (USACE, 1999). Currently the run averages between 100 and 500 Chinook salmon (pers.com. Keith Whitener, TNC).

Hypothesis

This project is designed to test the hypothesis that: **Creating a stable channel without structural measures and returning suitable size clean gravel to the system, will lead to improved salmon spawning habitat and accelerated riparian reforestation which will likely increase the San Joaquin fall run Chinook salmon population.** Project benefits will also include improved habitat for heron, egret, Swainson's hawk, and elderberry beetle. The hypothesis will be tested by monitoring the number of fish that use the project area, the amount of sediment entering the system, the number of birds nesting in the restored habitat along with temperatures, and velocities within the restored channel. The microtopography, and the pool riffle formation will also be surveyed.

Adaptive management

The methods employed in this project have been tested and used successfully for hard-engineered stream bank restoration projects in many locations. The technology has been widely accepted by the engineering community. This project will take these tested techniques and apply them for ecosystem restoration purposes. These techniques have been used for management of the Mississippi River and at many other locations. A stable earth channel was recently created on Dry Creek using the same principles.

The HEC-RAS and CHAN STAB models show that these techniques will be successful for the ecosystem restoration goals of this project.

Extensive monitoring will be used throughout the project to assess its success. Changes will be made as necessary. If problems are identified the detail of the models will be increased. An area of uncertainty is the ability of the riparian vegetation to establish itself. Plants will be replanted until the desired canopy is developed. If the native plants chosen fail to provide this canopy, other native species will be substituted.

Educational objectives

The geomorphic stream restoration demonstration project will lead to a better understanding of channel dynamics, how they affect habitat restoration and how they affect threatened and endangered species. Furthermore, the project will show that restoring watershed habitats can provide benefits for research and aesthetics.

This project will be exhibited at Cosumnes River Task Force public workshops and tours. The workshops will involve local landowners and public agencies and are attended by 100 to 200 people. The Cosumnes River Task Force quarterly newsletter will also contain progress reports on the project. This newsletter is sent to approximately 1000 people, including landowners and public agency representatives.

PROPOSED SCOPE OF WORK

Location

The project is located in an unincorporated area of Sacramento County with a general plan designation of Agricultural General (A-1) zone. It will be conducted on private agricultural property owned by Leland Schneider and public property owned by County of Sacramento Parks Department. The Cosumnes River is a tributary of the Sacramento-San Joaquin River Delta, located in ecozone 11 (East side Delta Tributaries). The project site is an approximately one-mile reach of river that flows downstream of the bridge at Highway 16 at river mile 32 (see location and vicinity map). The project site is located on the Carbondale 7 1/2 minute USGS quadrangle, Section 4, Township 7 N and Range 8 E.

Approach

This project will take a demonstration approach to restore channel processes to the project area, replant native riparian habitat along both banks of a one -mile reach of the Cosumnes River, and return gravel that will provide Chinook salmon spawning habitat. Fifty acres of riparian habitat will be restored.

Project activities will include: Removing and controlling non-native vegetation; re-shaping the channel to create a floodplain bench; re-shaping the lower flood plain bench; replanting the bench and banks with native trees, shrubs, forbs and grasses; on-going vegetation management; sorting and cleaning gravel; And, returning properly sized gravel to the system.

The channel will be constructed through a historically meandering channel system that has been incised seven feet since 1952 (Philip Williams & Assoc., 1997) due to large flood events and system changes. The reconstruction of the channel will accelerate the recovery of the project area. The channel cross section is presently meandering in response to the deposition downstream of the bridge. The existing flooding patterns upstream and downstream of the project will not be affected. The project area will have a reduced risk associated with flows in the channel going out of bank onto the surrounding flood plain. The floodplain bench is expected to have water at flows exceeding 6,600 cfs. These flows will be low velocity and are expected to deposit sediment and material. This will create a microtopographic

surface for riparian plant species. As plants grow and mature the "friction" associated with these materials will increase and velocities will become slower and less erosive.

1. Grading

NRCS has designed proposed channel cross sections and bank configurations for the project. The existing channel will be re-shaped into a cross section that will contain the 67 % or 1.5 year flow of 6,600 cfs. The channel cross section will be a parabolic cross section and consistent throughout the project. The pool-riffle sequence is expected to form in the constructed section by re-sorting the new bank materials as the channel processes "armor" the outside curve and deposit the sorted material in the downstream cross section. The constructed channel will be built of sorted material found on site. The banks will be built of coarser material than the beds and the finer material will be placed onto the floodplain benches. The finer material will provide a more suitable substrate for riparian plant establishment and growth. (see schematic cross-sections, attachment A). The bottom of the floodplain bench will be located below the "ordinary high water" level in the channel. Work within the existing stream zone will be restricted to periods of low water flow and dry weather. Work will include using bull dozers, loaders, a water truck, scrapers, and a gravel separator.

Excavation of the new floodplain bench would occur below the "ordinary high water" level in the channel. The term "ordinary high water" is defined as flows equal to or more frequent than the 50% event. The flow estimate for this reach for "ordinary high water" is about 11,000 cfs.

2. Revegetation

Native species of sedges (*Carex barbarae* and *C. praegracilis*) and rushes (*Eleocharis macrostachya*, *Juncus effusus* var. *brunneus* and *J. xiphioides*) will be planted along both edges of the reconstructed channel. A row of willow (*Salix spp.*) cuttings taken from existing trees in the project vicinity will be planted adjacent to the row of sedges and rushes. This section of vegetation is expected to increase the stability of the channel. The remainder of the newly constructed floodplain will be planted to willows (*Salix spp.*), Fremont cottonwood (*Populus fremontii*), Sanford's arrowhead (*Sagittaria sanfordii*) and California sycamore (*Plantanus racemosa*). The floodplain trees will provide shade, organic matter, and large woody debris to the channel, as well as food, cover, perching and nesting sites for terrestrial wildlife.

Severely eroding areas of the bank will be stabilized with creeping wildrye (*Leymus triticoides*), California blackberry (*Rubus ursinus*), California wildrose (*Rosa californica*), and blue elderberry (*Sambucus mexicana*). These plants will control soil erosion, improve water quality in the stream by filtering runoff, and provide food and cover for wildlife. Some bank shaping will be required to facilitate planting and establishment of plant material. Supplemental irrigation and weed control will need to be provided during the 2-3 year establishment period. Bank areas used or occupied by riparian bank swallows (*Riparia riparia*) will not be disturbed. Existing vegetation will be retained.

The existing vegetation on the edges of the farmed floodplain and airport floodplain will be maintained as a buffer area for the riparian revegetation.

3. Gravel Enhancement

The excavated material will be sorted and gravel that would be useful for Chinook salmon spawning will be cleaned then returned to the channel. Optimum gravel for Chinook salmon spawning should be 1.3 to 10.2cm, with a mix of 80% between 1.3 and 5.1 cm in diameter and 20% from 5.1 to 10.2cm (USFWS et.al, 1986).

Monitoring and Assessment Plans

Water velocity, water temperature, the amount of sediment entering the system, and bed material composition will be monitored by NRCS. During the life of the project, NRCS will monitor the response of the channel. The microtopography will be monitored using photo points and NRCS will survey the pool riffle establishment. The existing pools and riffles will be noted with GPS equipment and loaded into a GIS. After the construction phase, GPS will be used again each year in late spring or early summer to mark the pools and riffles then loaded into a GIS for comparison with earlier years.

A biologist will monitor the project site during the plant establishment period (first 2 years) to determine the success rates of restoration plantings and the need for plant replacement. Plants will be evaluated in mid summer and early fall during each year of the 2-year plant establishment period. The monitoring program will include individual plant counts (summarized as percent survival values). Notes for each monitored plant will report vigor, height, and significant factors affecting plant survival.

Fisheries monitoring will be conducted after completion of the project to determine the relative effects of the restoration on spatial and temporal spawning distribution and juvenile rearing of fall-run Chinook salmon within the newly formed channel. California Department of Fish and Game (CDFG) in cooperation with the Fishery Foundation of California (FF) and U.C. Davis is currently monitoring salmon populations and habitat conditions within the Cosumnes River using weekly carcass counts and redd surveys during spawning periods. Post project monitoring will build upon this effort. Existing data gathered by CDFG, FF and UCD will be combined with detailed site-specific data from the project area as well as direct observation juvenile rearing data and invertebrate sampling.

Monitoring of Chinook salmon spawning within the project reach will be conducted by CDFG, FF and UCD in the form of carcass counts and redd surveys. Pre-project data is available from spawning years 1998 and 1999 and will be used as comparative data. Redds will be extensively mapped within the project area to determine if spawning is occurring within specific microhabitats of the newly formed channel and to determine if superimposition is occurring.

Direct observation snorkeling procedures will be used to determine if juvenile Chinook salmon rearing is occurring within the project area. Four microhabitats within the project area and four outside the study area will be sampled.

Benthic invertebrate samples will be collected at four riffles, two located in the project area and two control riffles located outside the project area. Samples will be collected using kick net sampling procedures.

Data Handling and Storage

The project proponents will use an Arc View 3.2 GIS to store the data collected whenever feasible. The data will be included in a final report at the end of year three and made available to agencies, universities, and libraries. The plan has been constructed in Auto-CAD version 12.

Expected Products/ Outcomes

All findings will be included in a final report to be issued at the end of year three. Throughout the life of the project proponents will give presentations on the projects progress at Cosumnes River Task Force workshops. The project will include at least one public tour of the project area.

Work Schedule

Task	Start date	End date
1. Permitting	March 2000	June 2000
2. Detailed Site Survey	June 2000	July 2000
3. Replanting	July 2000	March 2002
4. Grading	June 2001	August 2001
5. Monitoring	September 2001	On going
6. Outreach	March 2002	On going
7. Project Management	On going	

These tasks are all essential to the success of the project and can not be separated.

Feasibility

The project will involve re-shaping the channel to create a floodplain bench and re-shaping the lower flood plain bench using earthmoving equipment. The HEC-RAS and CHAN STAB models predicted that this approach will successfully reduce flow velocities which will lead to a reduction in bank erosion. The HEC-RAS analysis indicates that the re-creation of a channel and floodplain bench will reduce peak and average floodplain bank velocities.

HEC-RAS, a program designed by the US Army Corps of Engineers that models flow and velocity for different channel geometry, has been used as a tool for describing exact conditions for sometime. CHAN STAB is a program designed by the USDA Natural Resources Conservation Service that checks the stability of channel designs (USDA NRCS, 1985).

Riparian vegetation will be planted on the floodplain bench and the banks with native vegetation. Vegetation roots and other growth hold together stream bank soil and help slow the erosive forces of the water (Riley, 1997) The added riparian vegetation will also provide shade cover that reduces temperature for aquatic wildlife.

The material excavated from the channel will be sorted. Gravel of the dimensions 1.3-10.2cm will be cleaned and returned to the river. It has been shown substrate requirements are critical for successful spawning and egg incubation (USFWS, 1986).

Preserving existing native trees may present design and hydraulic constraints for the project. While desirable from a biological perspective, existing trees, predominately sandbar willow, to be protected may create areas of local hydraulic uncertainty where deposition and scour may require some post-project stabilization. However, we expect that the potential for deposition and scour in these areas will be reduced due to generally lower water velocities resulting from the project.

The following is a description of agency coordination to date, and the anticipated regulatory requirements for the proposed project.

Under **Section 404 of the Clean Water Act**, the U.S. Army Corps of Engineers has jurisdictional authority over placement of dredge or fill material or excavating in waters of the United States, including wetlands. Waters of the U.S. include any channels that convey natural runoff, including intermittent streams, even if they have been historically realigned. A Section 404 permit is needed for any discharge activity below the "ordinary high water" level, which is the water level at a flow equal to the mean annual flood event. The term "discharge activity" includes any activity that would affect the surface water conveyance or capacity of the channel.

The Corps' Regulatory Branch will receive a project description and their representative, will visit the site. The Corps' confirmed they would have jurisdictional authority. We will provide the Corps with

surveyed cross-sections of the project site that indicate the ordinary high water mark and request written confirmation of the determination.

The **Federal Endangered Species Act (ESA)** prohibits the "take" of any species listed by the U.S. Fish and Wildlife Service or California Department of Fish and Game as threatened or endangered. This includes actions that directly kill the organism or that adversely modify its habitat or jeopardize its continued existence at the site. The ESA requires that federal agencies consult with the Secretary of the Interior to determine whether their proposed actions would jeopardize listed species. We have contacted the Endangered Species Section of USFWS to discuss the proposed project. We have provided them with a project description to initiate an informal consultation and provide us with any considerations for protection of federally listed species. In response, USFWS has provided Audubon with a letter confirming that proposed measures to avoid adverse effects to the potential valley elderberry longhorn beetle habitat is not likely to result in take. In addition, coordination will need to occur with National Marine Fisheries Service due to the presence of salmon in the Cosumnes River.

The **National Environmental Policy Act (NEPA)** requires all federal agencies to assess the environmental effects of their actions. These actions include projects for which the federal agency issues a permit or other authorization or funding, in whole or in part, for the proposed action. Because NRCS has provided technical assistance and could potentially be a cost share partner on the proposed project, they are the lead agency for preparing the environmental documentation for the proposed project under NEPA.

The State and Regional Water Resources Control Board (SWQCB and RWQCB) reviews all Section 404 permit applications for compliance with **Section 401 of Clean Water Act (Water Quality Certification or Waiver)** and can deny them or attach additional terms and conditions. Because no permit application is required for Section 404 of the Clean Water Act (see above) no Water Quality Certification or Waiver will be required as part of the proposed project (pers com Richard McHenry).

Section 1600 of the Fish and Game Code requires any person who proposes a project or activity that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use materials from a streambed to notify the California Department of Fish and Game (DFG) before beginning the project or activity. Notification is generally required for any project or activity that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. A Streambed Alteration Agreement issued by DFG is a written document signed by the landowner and DFG that includes a description of the project and project conditions necessary to protect fish or wildlife resources. Audubon has met with DFG for a consultation to visit the project site and discuss the proposed project (pers. com., Craig Stowers). DFG has received the Streambed Alteration Agreement signed on December 12, 1999 (Notification No II-604-99). DFG has determined that the project needs to be reviewed in accordance with CEQA (see below) before they are able to issue the final agreement to the landowner.

California Environmental Quality Act (CEQA) requires state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. The issuance of permits and provision of funding for the project are considered discretionary actions. As CEQA compliance is required to issue a Streambed Alteration Agreement (see above), DFG will serve as the "lead agency" for review under the CEQA. As such, DFG will be responsible for preparing and circulating the required environmental documentation.

The **California Endangered Species Act (CESA)** directs state lead agencies (in this case DFG) to reject a proposed project that would jeopardize listed species or destroy habitat essential to their existence if reasonable and prudent alternatives are available. CESA does not protect rare plants. In

reviewing the notification package and issuing a Streambed Alteration Agreement, DFG will determine if the project complies with CESA and outline appropriate conditions for avoiding or minimizing adverse effects to state listed species.

APPLICABILITY TO CALFED ERP GOALS, IMPLEMENTATION PLAN AND CVPIA PRIORITIES.

ERP Goals and CVPIA Priorities

The Central Valley Project Improvement Act section 3406 1b lists doubling the population of anadromous fish in the Central Valley as a primary goal. This project will take steps to reach this goal by increasing the population of San Joaquin fall run Chinook salmon in the Cosumnes River. Furthermore, the project proponents will use the success of this project to encourage the application of similar techniques in other reaches of the river.

The project also addresses CALFEDs "habitats" goal and it's "ecosystem processes and biotic communities" goals. Rehabilitation of the riparian habitat will provide benefits for both scientific research and aesthetics. This project will lead to a self-sustaining community that does not require high levels of human manipulation. Rehabilitation of the natural riparian habitat will encourage the dominance of native riparian and aquatic species. This project will provide valuable information about channel dynamics and how they affect habitat restoration.

Relationship to Other Ecosystem Restoration Projects

The project proponents are members of the Cosumnes River Task Force. The task force is a landowner lead group that is developing a coordinated resource management plan for the Cosumnes watershed. If the project is successful, the task force would investigate opportunities to implement similar projects on other parts of the river.

The Nature Conservancy has been working in the lower watershed to preserve riparian and shady riverine habitats as well as to provide Chinook salmon spawning habitat. This project will be consistent with their restoration goals for the Cosumnes River watershed.

The Fishery Foundation of California received a grant from CALFED in 1998 to improve upstream passage for Chinook salmon on the Cosumnes river. The improved passage provided by the fisheries foundation project will make it even more critical to provide improved spawning habitat in the system.

System-Wide Ecosystem Benefits

This project has the potential to provide several benefits to the Cosumnes River system. This project will lead to a reduction in sediment entering the system, the improved riparian habitat will lead to improved water quality and there will be improved salmon spawning habitat. If this project is successful, similar measures could be implemented in other parts of the system.

QUALIFICATIONS

The **Sloughhouse Resource Conservation District (RCD)** has been involved in conservation efforts since 1956. They were successful in starting the Cosumnes River Task Force CRMP after the flooding of 1997 as well as obtaining 5 million dollars for repairs. They are committed to addressing erosion and sedimentation problems within the Cosumnes river basin. The RCD has a long history of providing conservation related services to landowners.

Mark Cocke, USDA NRCS Watershed Planning Services. Mr. Cocke has a B.S. in civil engineering and is a registered civil engineer in the state of California. He has worked with the NRCS Watershed planning services since 1987. He was team leader for the McCoy wash flood control project and wrote the Morro Bay enhancement plan. He was involved in the upper Penitencia flood plain restoration in San Jose, which involved surface profile modeling similar to the methods used for this project.

Teresa Velasquez: Bachelor Degree in Civil Engineering: *University of Guadalajara, México (1986-1991)* Master of Science in Civil Engineering: *California State University, Sacramento (1992-1994)* Student trainee with the USDA Soil Conservation Service (Design Section, State Office, Davis CA) (1992-1994) Field Office Engineer with the USDA Soil Conservation Service (Dixon, CA Field Office) (1995-1998) Civil Engineer with the USDA Natural Resources Conservation Service Wetland Team (Elk Grove, CA Service Center) 1999-present.

Karen Fullen has been an NRCS employee in California for 8 years, including 2 years as a Soil Conservationist and 6 years as a Biologist. She has a B.S. degree in Biology with an emphasis in Ecology from California State University, Fresno and an A.S. degree in Forestry from Kings River Community College. She is a member of the Society for Ecological Restoration.

COST

Staff time budget

Year	Position	Time Commitment	Salary	Total Cost
Year 1	Civil Engineer	80 hours	\$50/ hour	\$4,000
	Hydrologist	80 hours	\$43/ hour	\$3,500
	Biologist	40 hours	\$43/ hour	\$1,750
	Fisheries Biologist	80 hours	\$40/ hour	\$3,200
	Project facilitator	40 hours	\$20/ hour	\$800
Year 2				
	Civil Engineer	40 hours	\$50/hour	\$2,000
	Hydrologist	40 hours	\$43/hour	\$1,720
	Biologist	80 hours	\$43/hour	\$3,500
	Fisheries Biologist	80 hours	\$40/hour	\$3,200
	Project facilitator	80 hours	\$20/hour	\$1,600
Year 3				
	Civil Engineer	40 hours	\$50/hour	\$2,000
	Hydrologist	20 hours	\$43/hour	\$860
	Biologist	80 hours	\$43/hour	\$3,500
	Fisheries Biologist	160 hours	\$40/hour	\$6,400
	Project facilitator	80 hours	\$20/hour	\$1,600
TOTAL		1,440 hours		\$39,630

Construction budget

Year	Task	Supplies/ labor	Equipment rental and operation	Total
Year 1	Earth Moving		300,000 ²	300,000
	Planting	75,175 ¹		75,175
Year 2	Monitoring	46,795		46,795
Year 3	Monitoring & Maintenance	\$20, 000		\$20,000
	Outreach	\$20,000		\$20,000
TOTAL				\$501,600

¹ Plants and labor

² Earth moving equipment, gravel sorter and operators @ \$1/yard

1% Overhead (office supplies, phone, rent, etc.) = \$5,016

Total project cost: \$ 506,616

Summary Budget

Staff time - \$39,630

Construction – \$375,175

Monitoring and maintenance- \$66, 795

Outreach- \$20,000

Overhead- \$5,016

TOTAL- \$506,616

Cost Share

There has already been a considerable amount of work put into this project. NRCS engineers have created a draft plan (attachment A) with the help of the landowner, biologists and fisheries biologists. The permitting process is also underway. 400 hours of staff time has been spent on this project to date with a value of **\$16,000**.

Local Involvement

The Cosumnes River Task Force, The Nature Conservancy, Sacramento County Department of Parks, Recreation and Open Space, Fisheries Foundation of California, Rancho Murieta Community Services District, and the landowners adjacent to the project are all aware of the project and support it. (see attached support letters) Mr. Leland Schneider owns the land on the south bank of the river. He knows about the project and fully supports it. (see attached permission for access letter) He has offered his help in the permitting and construction process. His neighbor to the east, Mr. Hutchinson, also supports the project. The land on the other side of the river is owned by Sacramento County. It is managed by the County Department Parks, Recreation and Open Space. They have also expressed their support of the project. (see attached letter) Sloughhouse RCD will work through the Cosumnes River Task Force to keep other watershed stakeholders informed about this project.

Literature Cited

Binford, M.W. and M.J. Buchenau. Riparian Greenways and Water Resources. Pg.69 in P.S. Smith and P.C. Hellumnd eds., Ecology of greenways: Design and function of linear conservation areas. 1993. University of Minnesota Press, Minneapolis MN

Guay, Joel R., Jerry G. Harmon, and Kelly McPherson, USGS. Flood inundation map and water-surface profiles for floods of selected recurrence intervals, Cosumnes river and Deer creek. Sacramento Co. CA 1998.

Philip Williams and Associates, Ltd. Analysis of Opportunities for restoring a natural flood regime on the Cosumnes river floodplain. May 1997 Volume 1 pg.52, Volume 2 Technical Appendices Appendix C.

Riley, Ann. Restoring Streams in Cities pp. 102-103, 1998

Rosgen, David. Applied River Morphology. Oct. 1996

U.S. Army Corps of Engineers. Lower Cosumnes and Mokelumne Rivers, Ca Expedited reconnaissance study 905 (b) analysis, pg.6 1999.

U.S. Fish and Wildlife Service and US Army Corps of Engineers. Species profiles: Life Histories and Environmental requirements of Coastal fishes and invertebrates (pacific southwest) Chinook Salmon. Pg.16 1986.

USDA Natural Resources Conservation Service. Lester I Hansen. CHANSTAB Channel stability program. Davis Ca pg.1 1985.

Attachment A
**Draft Project Plan
and
Location Map**

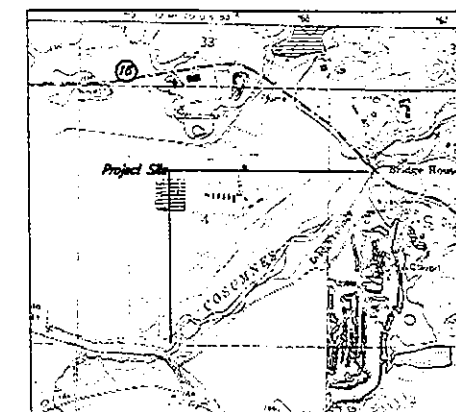
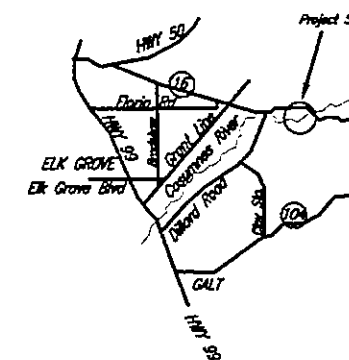


GENERAL NOTES

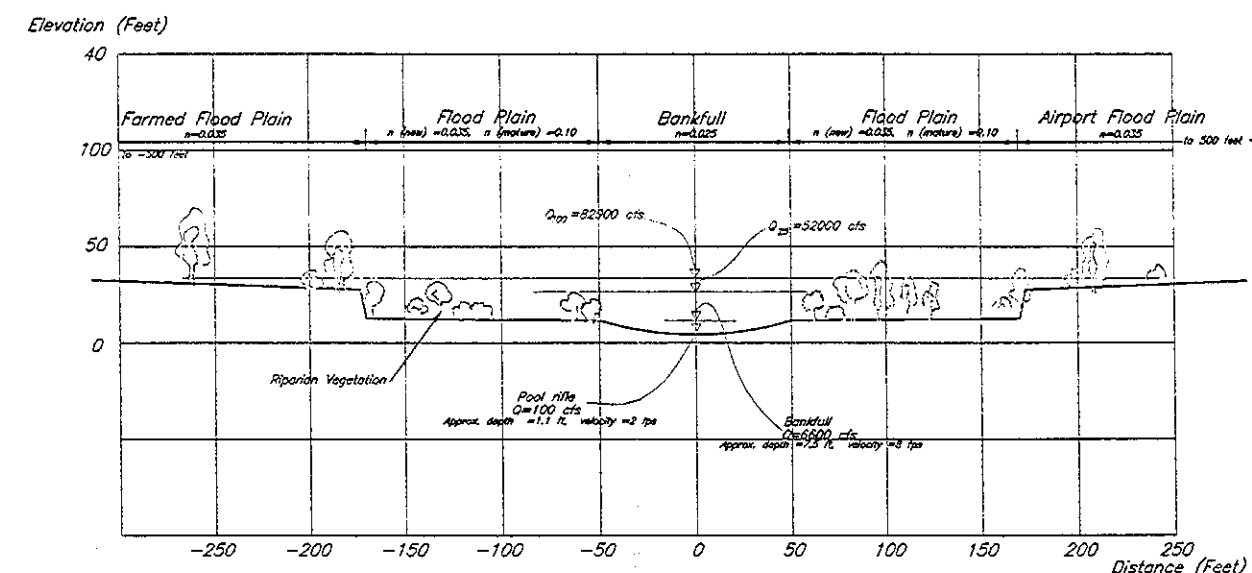
1. All construction shall be in accordance with these drawings and attached specifications: Mobilization (580), Streambank (580), Critical Area Planting (342), Channel Vegetation (322) and Removal of water (754).
2. Landowner shall be responsible for obtaining any needed permits, easements and/or right-of-ways, and meeting all legal requirements.
3. Landowner shall be responsible for locating and protecting all utilities.

CONSTRUCTION NOTES

- 1. Draft Plan (Based on a preliminary GPS survey)
- 2. All lines and grade shown on these plans are approximate.



2000 0 2000
Scale in Feet



TYPICAL CROSS SECTION

JOB CODE 580 ENGR CLASS V

Sacramento County

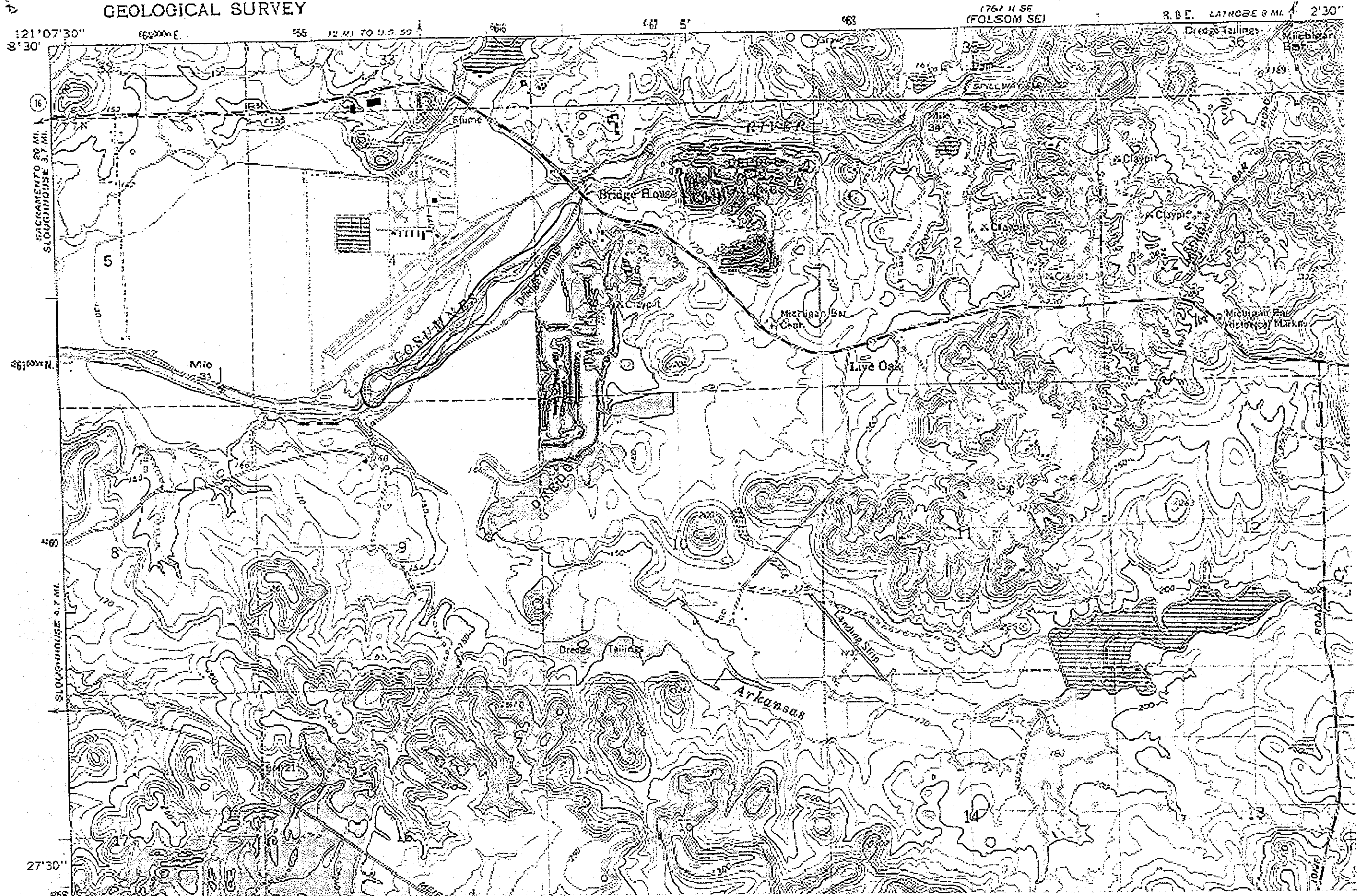
COSUMNES RIVER RIPARIAN ENHANCEMENT
Schenelder Property & Sacramento County Parks Department

SLOUGH HOUSE RESOURCE CONSERVATION DIST.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

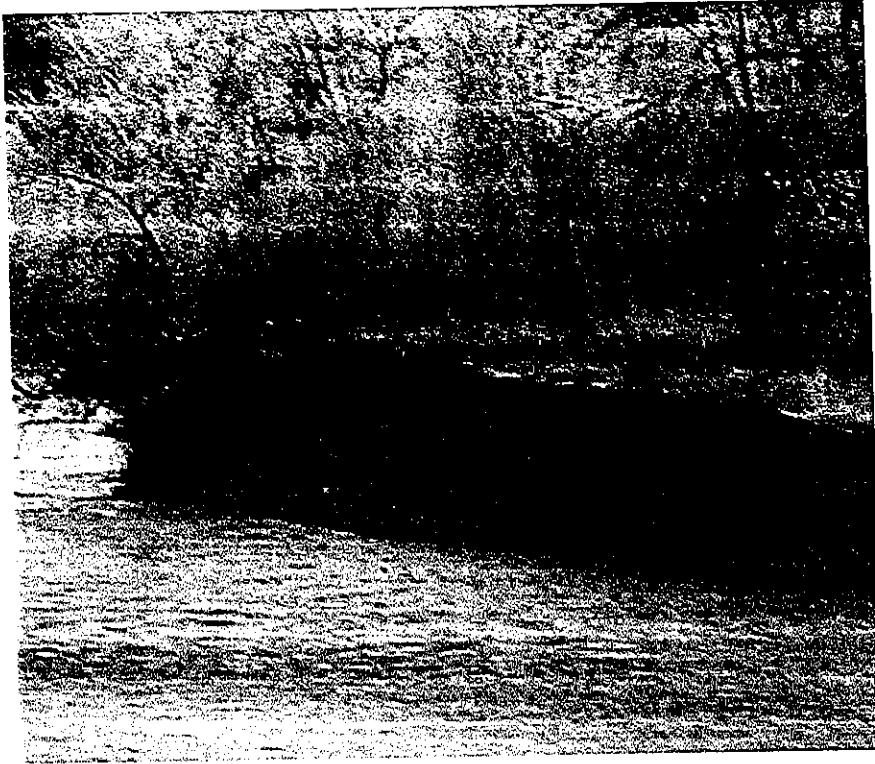
Designed	Mark Cade	Date	1/90	Approved by	
Drawn	Theresa Holman	Date	1/90	Title	
Checked		Date		Title	
Checked		Sheet No.	1	Drawing No.	CO1-3-2000
Checked		at	1		

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Attachment B

Project Site Pictures



Bank erosion affects both sides of the river



Gravel Bars are contributing to the erosion problem in the project area

Attachment C

**Local Notification
And
Permission for Access
Letters**



County of Sacramento
Department of Regional Parks, Recreation
and Open Space



RECREATION & PARK
AND

FISH & GAME COMMISSION

May 8, 2000

Robert J. Bastian
Michele McCormick
Theodore M. Robinson
Art White
Louis Zimmerle

Jenny Pickel
Sloughhouse RCD
9701 Dino Drive, Suite 170
Elk Grove, CA 95624

RONALD D. SUTER
Director

DEPUTY DIRECTORS
Roy Imai - Planning &
Regional Parks
Gary Kukkola - American
River Parkway
Thom Oliver - Golf

RE: COSUMNES RIVER STREAM RESTORATION

Dear Jenny:

Thank you for allowing us to review the geomorphic stream restoration demonstration project proposal. I am supportive of this stream restoration project and will allow you access to our parkland down stream of the Jackson Highway in Ranch Murieta for engineering, construction, planting, maintenance and monitoring purpose pursuant to an approved plans and permits.

This letter is also sent to support the Sloughhouse RCD's effort to secure grant funds from Cal Fed to undertake this stream restoration demonstration project on Cosumnes River downstream of Jackson Highway in Ranch Murieta.

I believe that this stream restoration demonstration project will help to solve the riverbank erosion, habitat degradation problem we are experiencing at this location; aid in fisheries habitat enhancement; while also benefiting adjacent landowners such as Sacramento County Parks Department. Please let us know how we can assist in the process.

Thank you for pursuing this project

Sincerely,

Ron Suter, Director

cc: D. Nottoli, J. O'Farrell, R. Imai, RPC, reading file
r\cosumnes\rmraerosion-pickel

Jenny Pickel
Sloughhouse RCD
9701 Dino Drive, Suite 170
Elk Grove CA 95624

May 8, 2000

Dear Jenny:

Thank you for allowing me to review the geomorphic stream restoration demonstration project proposal. I am supportive of this project and will allow you access to my land for construction, planting, maintenance and monitoring purposes.

I believe that this project will benefit the ecosystem and landowners such as myself. Thank you for pursuing this project.

Sincerely,

A handwritten signature in cursive script that reads "Leland A. Schneider". The signature is written in dark ink and is positioned above the printed name.

Leland Schneider

Jenny Pickel
Sloughhouse RCD
9701 Dino Drive, Suite 170
Elk Grove CA 95624

May 8, 2000

Dear Jenny:

Thank you for allowing me to review the geomorphic stream restoration demonstration project proposal. I am supportive of this project and will allow you access to my land for construction, planting, maintenance and monitoring purposes.

I believe that this project will benefit the ecosystem and landowners such as myself. Thank you for pursuing this project.

Sincerely,

Billy E Hutchinson



SLOUGHHOUSE RESOURCE CONSERVATION DISTRICT
9701 Dino Drive, Suite 170 Elk Grove, CA 95624

Sacramento County
Planning Department
700 H St.
Sacramento Ca 95814

May 13, 2000

RE: Potential upcoming restoration project in Sacramento County

The Sloughhouse Resource Conservation District will be submitting a grant proposal to the CALFED Ecosystem Restoration program for fiscal year 2001 funding. Our proposal is for a project that will take place in the Sloughhouse area of Sacramento County. The project area is a mile of the Cosumnes River just below the highway 16 crossing. The large flood events of 1986 and 1997 as well as other system changes have lead to a severe erosion problem on both banks of the river. On the property owned by Leland Schneider on the south side, the erosion threatens a heron and egret rookery. Erosion on the north bank threatens the Rancho Murieta airport.

Our project proposes to minimize further erosion damage using geologic and physical principals. The project seeks to optimize benefits to overall watershed health. The erosion has resulted in sedimentation that has inundated Chinook salmon spawning gravels thus reducing the available habitat. The project will involve reconstructing the channel, replanting valuable native riparian habitat, and returning clean gravel to the system for spawning habitat. Models have predicted that this approach will be successful in reducing water velocity and stabilizing the banks.

Sacramento County Parks and Recreation, who owns the property on the north river bank, has been contacted about this project and has expressed its support. Enclosed is a copy of the grant proposal that is being sent to CALFED. Please feel free to call us at 916-714-1104 ext.3 if you have any questions about the project.

Sincerely,

Jenny Pickel
Project Coordinator
Sloughhouse Resource Conservation District



SLOUGHHOUSE RESOURCE CONSERVATION DISTRICT
9701 Dino Drive, Suite 170 Elk Grove, CA 95624

Clerk
Sacramento County
Board of Supervisors
700 H St.
Sacramento Ca 95814

May 13, 2000

RE: Potential upcoming restoration project in Sacramento County

The Sloughhouse Resource Conservation District will be submitting a grant proposal to the CALFED Ecosystem Restoration program for fiscal year 2001 funding. Our proposal is for a project that will take place in the Sloughhouse area of Sacramento County. The project area is a mile of the Cosumnes River just below the highway 16 crossing. The large flood events of 1986 and 1997 as well as other system changes have lead to a severe erosion problem on both banks of the river. On the property owned by Leland Schneider on the south side, the erosion threatens a heron and egret rookery. Erosion on the north bank threatens the Rancho Murieta airport.

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Sincerely,

Jenny Pickel
Project Coordinator
Sloughhouse Resource Conservation District

Attachment D

Threshold Requirements

1. Do any of the actions included in the proposal require compliance with either the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), or both?

Yes

No

- NEPA- NRCS CEQA- DFG

Lead Agency

4. If NEPA/CEQA compliance is required, describe how the project will comply with either or both of these laws. Describe where the project is in the compliance process and the expected date of completion.

5. Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?

Yes

No

6. Please indicate what permits or other approvals may be required for the activities contained in your proposal. Check all boxes that apply.

LOCAL

Conditional use permit

Variance

Subdivision Map Act Approval

Grading permit

General plan amendment

Specific plan approval

Rezone

Williamson Act Contract cancellation

Other

(please specify)

None required

Land Use Checklist

1. Do the actions in the proposal involve physical changes to the land (i.e. grading, planting vegetation, or breaching levees) or restrictions in land use (i.e. conservation easements or placing of land in a wildlife refuge)?

X
Yes

No

2. If NO to #1, explain what types of actions are involved in the proposal (i.e. research or planning)

3. If yes to 1, what is the proposed land use change or restriction under the proposal?

Channel grading and planting

4. If YES to #1, is the land currently under a Williamson Act contract

Yes

5. If YES to #1, answer the following:

Current land use

Agriculture

Current Zoning

Agriculture General (A-1) zone

Current general plan designation

Agriculture general

6. If YES to #1, is the land classified as Prime Farmland, Farmland of Statewide Importance or Unique Farmland on the Department of Conservation Important Farmland Maps?

No

7. If YES to 1, how many acres of land will be subject to physical change or land use restrictions under the proposal?

50 acres

8. If YES to #1 is the property currently being commercially farmed or grazed?

no

9. If YES to #8, what are

the number of employees/acre Not applicable

the total number of employees Not applicable

10. Will the applicant acquire any interest in land under the proposal (fee title or a conservation easement)?

Yes

X
No

11. What entity/organization will hold the interest? Not applicable to proposed project.

12. If YES to #10, answer the following:

Total number of acres to be acquired under proposal

Not applicable to proposed project.

Number of acres to be acquired in fee

Not applicable to proposed project.

Number of acres to be subject to conservation easement

Not applicable to proposed project.

13. For all proposals involving physical changes to the land or restriction in land use, describe what entity or organization will:

manage the property

landowners

provide operations and maintenance services

Sloughhouse RCD

conduct monitoring

NRCS, CDFG, UC Davis

Attachment E

Letters of Support



Cosumnes River Preserve
13501 Franklin Boulevard
Galt, California 95632

International Headquarters
Arlington, Virginia

May 10, 2000

TEL 916 683-2142
FAX 916 683-1702

Jenny Pickel
Project Coordinator
Sloughhouse RCD
9701 Dino Dr., Suite 170
Elk Grove, CA 95624

Dear Ms. Pickel,

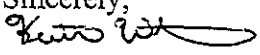
I am writing on behalf of The Nature Conservancy's Cosumnes River Project to express our support for Sloughhouse RCD's proposal to enhance riparian habitat along the Cosumnes River below Highway 16. This project will address two issues that The Nature Conservancy has attempted to further through its involvement in the Cosumnes River Preserve; the protection and restoration of critical habitats along the Cosumnes River and the continuing collaboration and cooperation of a wide range of stakeholders working together to ensure the biological and hydrological health of the Cosumnes River.

Starting in 1984, The Nature Conservancy began a focused plan along the Cosumnes River to protect endangered ecosystems while accommodating appropriate growth and sustainable economic development within the region. Today, the Cosumnes River Preserve encompasses approximately 40,000 acres and includes partnerships with state and local agencies, local landowners, businesses and other private partners. TNC's involvement in this very fruitful partnership has shown how collaboration of the nature described in this proposal can ensure positive results that can benefit all stakeholders.

From a habitat restoration perspective, this project addresses many of the critical habitats that TNC has focused on including riparian and shady riverine habitats, heron and egret rookery habitat and chinook salmon spawning and rearing habitat. Bank erosion and the associated habitat loss and sediment deposition is a threat to many of the critical processes that ensure the continuing health of the river. Demonstration projects of this nature will aid in providing important tools for dealing with bank erosion and can determine the future uses of such restoration along the Cosumnes River by TNC and our partners.

An enhanced Cosumnes River corridor brought about by restoration throughout the watershed will continue to multiply the efforts made by TNC and our partners on the Cosumnes River Preserve.

We look forward to participating in the continuing efforts of Sloughhouse RCD in their riparian enhancement project.

Sincerely,

Keith Whitener
Project Ecologist



Rancho Murieta Community Services District

15160 Jackson Road • P.O. Box 1050 • Rancho Murieta, CA 95683 • (916) 354-3700 • Fax (916) 354-2082

May 10, 2000

Jenny Pickel
Sloughhouse RCD
9701 Dino Drive, Suite 170
Elk Grove, CA 95624

SUBJECT: COSUMNES RIVER STREAM RESTORATION

Dear Ms. Pickel:

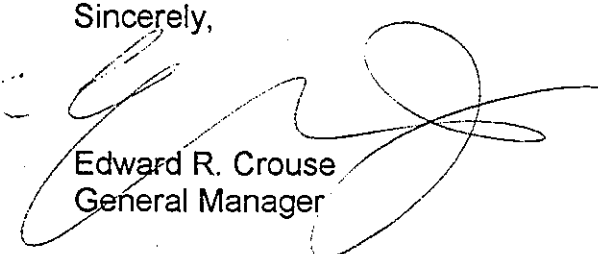
The District understands the RCD is working with Sacramento County Parks Department on a stream restoration project on the Cosumnes River downstream of the Jackson Highway. The District is supportive of this stream restoration project.

This letter is also sent to support the Sloughhouse RCD's effort to secure grant funds from Cal Fed to undertake this stream restoration demonstration project on the Cosumnes River.

We believe that this stream restoration demonstration project will help to solve the riverbank erosion and habitat degradation problem we are experiencing at this location, aid in fisheries habitat enhancement, while also benefiting adjacent landowners such as Sacramento County Parks Department. Please let us know how we can assist in the process.

Thank you for pursuing this project.

Sincerely,



Edward R. Crouse
General Manager

ERC:klm

cc: D. Nottoli, J. O'Farrell, R. Suter, R. Imai



BOARD OF SUPERVISORS COUNTY OF SACRAMENTO

700 H STREET, SUITE 2450 • SACRAMENTO, CA 95814

DON NOTTOLI
SUPERVISOR, FIFTH DISTRICT
(916) 874-5465
FAX (916) 874-7593

May 12, 2000

Ms. Jenny Pickel, Project Manager
Sloughhouse RCD
9701 Dino Drive, Suite 170
Elk Grove, CA 95624

Dear Ms. Pickel:

I am pleased to provide this letter of support for the Sloughhouse Resource Conservation District's (RCD) proposal to provide enhancements to the Cosumnes River riparian habitat below Highway 16. The project is designed to protect and restore critical Cosumnes River habitat while addressing the erosion problems which continue to impact the riverbanks and adjacent properties.

Sacramento County has generally been very supportive of projects which entail collaboration among multiple stakeholders, agencies and interest groups. In my opinion, collaboration on a project such as this could result in positive watershed improvements for our natural resources and landowners.

As you will note, this project would address many critical habitats including riparian and shady riverine habitats, heron and egret rookery habitat and Chinook salmon spawning and rearing habitat. Bank erosion and the associated habitat loss and sediment deposition is a threat to many of the critical processes that ensure the continuing health of the river. Demonstration projects of this nature can also assist in providing important tools for addressing the problem of bank erosion and its resulting impacts.

We would welcome the opportunity to continue working with the Sloughhouse RCD and other community partners in their riparian enhancement project and I would ask for your favorable consideration of this funding proposal.

Sincerely,

Don Nottoli, Supervisor
Fifth District



May 10, 2000

Jenny Pickel
Project Coordinator
Sloughhouse RCD
9701 Dino Dr., Suite 170
Elk Grove, CA 95624

Dear Ms. Pickel,

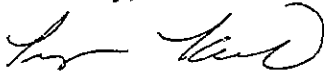
I am writing this letter in support of Sloughhouse RCD's proposal to enhance riparian habitat through channel reconfiguration along the Cosumnes River. As a fisheries biologist for the Fishery Foundation of California I have worked on fisheries issues on the Cosumnes River and Deer Creek for three years. In this time it has become apparent that the reach of the Cosumnes below Highway 16 has serious erosion and sediment transport problems that are affecting the health of the chinook salmon population.

Erosion of the banks in this area are contributing excessive amounts of sediment to the project area which adversely affects production of fry. The riparian corridor is also being affected by the erosion and contributing to the loss of shady riverine habitat that is important to the health of the fisheries.

In 1998, the Fishery Foundation applied for and was the recipient of a CALFED grant to modify structures at four locations to improve upstream passage for chinook salmon on the Cosumnes River. Construction is scheduled to begin this summer. This improved passage capability will allow more fish access to the historical spawning reach on the Cosumnes and thereby magnify the importance of improving the spawning habitat within this reach. The proposed project will a good opportunity to enhance the conditions in a localized area and determine if these type of pilot projects will be useful in our continuing effort to increase the population of the chinook salmon on the Cosumnes River.

The Fishery Foundation welcomes the opportunity to work with Sloughhouse RCD on an ongoing basis to improve habitat conditions for chinook salmon on the Cosumnes River.

Sincerely,



Trevor Kennedy
Fisheries Biologist

Attachment F

**State And Federal
Forms**

NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (REV. 3-95)

COMPANY NAME

Sloughhouse Resource Conservation District

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), medical condition (cancer), age (over 40), marital status, denial of family care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

William Mosher

DATE EXECUTED

5-12-2000

EXECUTED IN THE COUNTY OF

Sacramento

PROSPECTIVE CONTRACTOR'S SIGNATURE

X William Mosher

PROSPECTIVE CONTRACTOR'S TITLE

President

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

Agreement No.: _____

Exhibit: _____

**NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID FOR PUBLIC WORKS**

STATE OF CALIFORNIA)

COUNTY OF Sacramento) ss)William Mosher _____, being first duly sworn, deposes and
says

(name)

that he or she is Chairman _____ of
(position title)Sloughhouse RCD _____
(the bidder)

the party making the foregoing bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

DATED: May 12, 2000By William Mosher _____
(Person signing for bidder)

Subscribed and sworn to before me on

May 12, 2000 by
William MosherKaren S. Garibay _____
(Notary Public)

APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 0348-0043

		2. DATE SUBMITTED 5-15-2000	Applicant Identifier
1. TYPE OF SUBMISSION:	Application <input checked="" type="checkbox"/> Construction <input type="checkbox"/> Non-Construction	3. DATE RECEIVED BY STATE	State Application Identifier
	Preapplication <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction	4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier
5. APPLICANT INFORMATION			
Legal Name: Sloughhouse Resource Conservation District		Organizational Unit: same	
Address (give city, county, State, and zip code): Elk Grove, CA Sacramento County 95624		Name and telephone number of person to be contacted on matters involving this application (give area code) Jenny Pickel 916-714-1104 ext. 3	
3. EMPLOYER IDENTIFICATION NUMBER (EIN): 68-0409701		7. TYPE OF APPLICANT: (enter appropriate letter in box) <div style="display: flex; justify-content: space-between;"> <div> A. State B. County C. Municipal D. Township E. Interstate F. Intermunicipal G. Special District </div> <div> H. Independent School Dist. I. State Controlled Institution of Higher Learning J. Private University K. Indian Tribe L. Individual M. Profit Organization N. Other (Specify) _____ </div> </div> <div style="text-align: right; border: 1px solid black; width: 30px; float: right;">G</div>	
3. TYPE OF APPLICATION: <div style="display: flex; justify-content: space-around;"> <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision </div> f. Revision, enter appropriate letter(s) in box(es) <input type="checkbox"/> <input type="checkbox"/> A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other(specify): _____		9. NAME OF FEDERAL AGENCY: CALFED	
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: TITLE: Not available		11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Geomorphic Stream Restoration Demonstration Project	
12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.): Sacramento county CA			
13. PROPOSED PROJECT		14. CONGRESSIONAL DISTRICTS OF:	
Start Date 3/00	Ending Date 6/02	a. Applicant 11	b. Project 11
15. ESTIMATED FUNDING:		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?	
a. Federal	\$.00	a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE _____ b. No. <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E. O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW	
c. Applicant	\$.00		
b. State	\$.00		
d. Local	\$.00		
e. Other	\$.00		
f. Program Income	\$.00	17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?	
g. TOTAL	\$ 5 .00	<input type="checkbox"/> Yes If "Yes," attach an explanation. <input checked="" type="checkbox"/> No	
18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.			
a. Type Name of Authorized Representative William Mosher		b. Title President	c. Telephone Number 916-714-1104 ext. 3
i. Signature of Authorized Representative <i>William Mosher</i>		e. Date Signed 5-12-2000	

Previous Edition Usable

authorized for Local Reproduction

Standard Form 424 (Rev. 7-97)

Prescribed by OMB Circular A-102

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION		a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1.	Administrative and legal expenses	\$ 9016	.00	\$ 9,016 .00
2.	Land, structures, rights-of-way, appraisals, etc.	\$.00	\$.00	\$.00
3.	Relocation expenses and payments	\$.00	\$.00	\$.00
4.	Architectural and engineering fees	\$ 14,080	.00	\$ 14,080 .00
5.	Other architectural and engineering fees	\$.00	\$.00	\$.00
6.	Project inspection fees	\$ 46,795	.00	\$ 46,795 .00
7.	Site work	\$ 75,175	.00	\$ 75,175 .00
8.	Demolition and removal	\$.00	\$.00	\$.00
9.	Construction	\$ 300,000	.00	\$ 300,000 .00
10.	Equipment	\$.00	\$.00	\$.00
11.	Miscellaneous	\$ 61,550	.00	\$ 61,550 .00
12.	SUBTOTAL (sum of lines 1-11)	\$.00	\$.00	\$.00
13.	Contingencies	\$.00	\$.00	\$.00
14.	SUBTOTAL	\$.00	\$.00	\$.00
15.	Project (program) income	\$.00	\$.00	\$.00
16.	TOTAL PROJECT COSTS (subtract #15 from #14)	\$ 506,616	.00	\$ 506,616 .00

FEDERAL FUNDING

17. Federal assistance requested, calculate as follows:

(Consult Federal agency for Federal percentage share.)

Enter eligible costs from line 16c. Multiply X _____ %

\$ 506,616 .00

ASSURANCES - CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title, or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal interest in the title of real property in accordance with awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progress reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

X *William Chalm*

TITLE

President

APPLICANT ORGANIZATION

Sloughhouse RCD

DATE SUBMITTED

5-15-2000

U.S. Department of the Interior

**Certifications Regarding Debarment, Suspension and
Other Responsibility Matters, Drug-Free Workplace
Requirements and Lobbying**

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used; use this form for certification and sign; or use Department of the Interior Form 1954 (DI-1954). (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12.)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

**PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters -
Primary Covered Transactions**

CHECK ☐ IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -
Lower Tier Covered Transactions**

CHECK ☐ IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK ☐ IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than Individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about--
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted --
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

Check ☐ if there are workplaces on file that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK ☐ IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

DI-2010
March 1995
(This form consolidates DI-1953, DI-1954,
DI-1955, DI-1956 and DI-1963)

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK ☐ IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT, SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK ☐ IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF \$150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING \$100,000, UNDER THE LOAN.

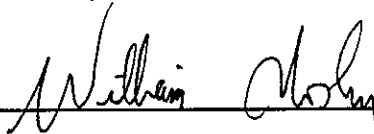
The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL



TYPED NAME AND TITLE William Mosher, President Sloughhouse RCD

DATE 5-12-2000

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